



United States
Environmental Protection
Agency

Office of Public Affairs
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Illinois, Indiana
Michigan, Minnesota
Ohio, Wisconsin

This Proposed Plan will give you...

- A brief history of the site.
- A summary of EPA's recommended cleanup alternative.
- Information on how the public can participate in EPA's decision-making process.

Opportunities for Public Involvement

Public Meeting

EPA will explain the recommended cleanup plan for the Sparta Landfill site to the residents of Sparta Township at a public meeting. Oral and written comments will also be accepted at the meeting.



Date: August 15, 2000
Time: 7:00 P.M.
Place: Sparta Township Hall
160 East Division
Sparta, Michigan

Public Comment Period

EPA will accept written comments on its recommended cleanup plan presented in this Proposed Plan during a 30-day public comment period (see section entitled "Public Comment Period" on page 5).

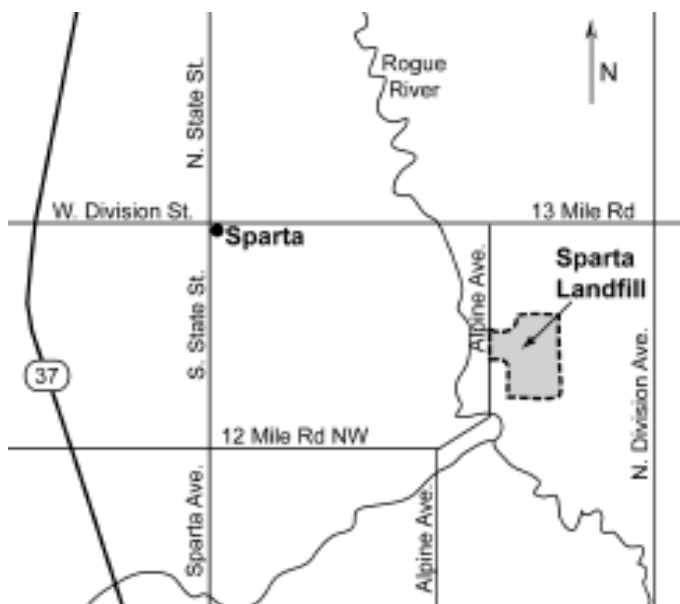
The comment period will be:

August 1 - 30, 2000

EPA Proposes Cleanup Plan for Sparta Landfill Site

Sparta Township, Michigan

August 2000



Introduction

This Proposed Plan summarizes the alternatives that have been considered by the United States Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality (MDEQ) for addressing the ground-water contamination at the Sparta Landfill, a Superfund site, located in Sparta Township, Kent County, Michigan. (See map above.) EPA is recommending No Further Action (Alternative 1) with Ground-Water Monitoring (Alternative 2) as the final cleanup remedy. (See page 5 for a detailed description of EPA's recommended cleanup alternative.)

The documents that EPA relied upon to select the recommended alternative are included in the information repository and Administrative Record for the site. (See section entitled Information Repository on page 6.) Public input on the alternatives and the information that supports these alternatives is an important contribution to the remedy selection process at all Superfund sites. Section 117 of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**¹, requires publication of a notice and brief analysis of a Proposed Plan. (Words in **bold** are defined in the glossary on page 7.) This Proposed Plan provides background information on the site, describes the alternatives being considered, presents the rationale for identification of EPA's recommended alternative, and outlines the public's role in assisting EPA and MDEQ in making a final decision.

The selected final remedy will be explained in a document called a Record of Decision (ROD), which will be included in the information repository and Administrative Record.

¹Section 300.415 (b)(4)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Section 113 (k)(2) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) require publication of a notice describing EPA's recommended alternative. The RI/FS must also be made available to the public for comment. This Proposed Plan is a summary of information contained in the RI/FS for the Sparta Landfill site. Please consult the RI/FS for more detailed information.

Site Background

The Sparta Landfill site is an inactive landfill located at 10322 Alpine Avenue, N.W., in Sparta Township, Kent County, Michigan, approximately one-half mile east of Sparta, Michigan. (See map on page 1.) The site is a closed municipal landfill covering approximately 26 acres. It is located one-tenth of a mile northeast of the Rogue River at its closest boundary. The Rogue River is used as a municipal water source by the City of Rockford which is 10.75 miles downstream of the landfill. The public water supply wells for Sparta are located near a tributary of the Rogue River approximately two miles upstream from the site.

Robert Schwab owned and operated about 12 acres of the landfill beginning in the 1940s. This location, Schwab Dump, was operated as an open dump accepting general residential, commercial, and solid wastes.

In 1972, Kent County (the County) began operations of the Sparta Landfill on property adjacent to the Schwab Dump. In 1973, the County acquired the Schwab Dump property. The licensed landfill accepted municipal refuse and industrial wastes under Michigan law. In 1977, the landfill was closed and a two-foot final sand cover was placed over the landfill.

In 1977, due to the complaints from local residents, the Kent County Health Department sampled ground water near the site and found contamination. In August 1979, the Michigan Department of Natural Resources (MDNR), now called the Michigan Department of Environmental Quality (MDEQ), detected **volatile organic compounds (VOCs)** in ground-water samples from on-site monitoring wells and nearby residential wells.

The County replaced four water supply wells, which were previously placed in the upper **aquifer** with deeper wells (approximately 245 to 280 feet deep) placed within bedrock, which is further beneath the lower aquifer, for the residences located adjacent to the landfill.

In September 1983, based on the results of EPA investigations, the site was placed on the National Priorities List (NPL). The NPL is a list of sites in the country that are eligible for study and cleanup, if necessary, under the Superfund program.

Site Characteristics

In 1981 and 1982, MDNR installed nine monitoring wells as part of a hydrogeological investigation. Glacial sediments (sand and gravel deposits underlain by clay) underlie the landfill and surrounding properties. Ground water occurs in the upper aquifer (sand and gravel unit) and flows from the northeast to the southwest toward the Rogue River. The upper aquifer is underlain by a continuous layer of clay. The clay separates the upper aquifer from the lower aquifer (sand and gravel) which is approximately 76 to 100 feet deep.

In June 1986, ground-water sampling of the on-site monitoring wells detected the presence of VOCs and **zinc**. In January 1991, the site was fenced and warning signs were posted by the County and MDNR.

In May 1992, July 1993, and during the **Remedial Investigation (RI)** in May 1996, ground-water samples were collected from the monitoring wells. The July 1993 sampling also included the collection of three surface water samples and three residential well samples.

Additional ground-water samples were collected in 1998 and 1999 in the upper and lower aquifers from sampling locations near the landfill. The samples were analyzed for contaminants previously detected during the RI in those specific wells. All but one of the monitoring wells used during the sampling events are located within or directly adjacent to the Sparta Landfill property boundary. The sampling results are presented below:

Upper Aquifer

- VOCs were detected but did not exceed federal or state drinking water standards in any samples.
- One **semi-volatile organic compound (SVOC)** was detected but did not exceed the federal or state drinking water standards in any samples.
- Metals such as **manganese**, iron, lead, aluminum, **nitrate-nitrite nitrogen**, **ammonia nitrogen**, silver, **barium**, and zinc were detected and exceeded federal and/or state drinking water standards (health-based or aesthetic) in some samples.

Lower Aquifer

Metals such as aluminum, iron, lead, and manganese were detected above federal and/or state drinking water standards in some samples.

Residential Wells

No contaminants were found.

Surface Water

With the exception of **cadmium**, no metals were detected above MDEQ's ground-water/surface water interface (GSI) criteria. Ammonia nitrogen was also detected, but below GSI criteria. The GSI is the level at which a chemical is considered to potentially pose risk to human health and the environment at the point where ground water meets surface water.

On September 23, 1993, the Kent County Department of Public Works signed a legal agreement with EPA to determine the potential threat to the public health caused by the release of contaminants from the Sparta Landfill.

The Kent County Department of Public Works carried out the RI. The main objective of the RI was to evaluate the ground water and surface water potentially impacted by the Sparta Landfill site.

Scope and Role of the Cleanup

On February 7, 1994, under a legal agreement with MDNR, the Kent County Department of Public Works agreed to **cap** the landfill prior to initiating the RI. A cap was installed to stop precipitation (rain, snow, etc.) from seeping into the landfill's refuse and carrying the contamination into the soil and ground water beneath. The refuse disposed in the Sparta Landfill is considered to be a "principal threat." However, the landfill cap minimized the risks posed by the chemicals of concern found in the refuse. The landfill was capped in 1995. MDEQ approved the cap on July 26, 1996.

Contaminated ground water is not considered a "principal threat" as defined by EPA guidance. The objectives for this final cleanup are to prevent current and future exposure to contaminated surface water and ground water.



Summary of Site Risks

Human Health Risks

As a part of the RI in 1997, a Focused Risk Assessment (FRA) was completed to determine current and future effects of contaminants associated with the Sparta Landfill on human health. However, since some of the data used for the 1997 FRA did not meet federal quality standards for sampling, and it had been such a long time since the sampling was conducted, an updated Screening Level Risk Assessment (SLRA) was prepared using only ground-water monitoring data from the 1996, 1998, and March 1999 ground-water monitoring events (more recent sampling results).

Chemicals of Potential Concern (COPCs) are those chemicals that pose the greatest potential risk to human health at the site. The following screening process was used to identify the COPCs at this site. The first step was to evaluate the federal quality standards for sampling for each of the specific types of samples expected to be taken. The second step compared concentrations of detected chemicals to levels established for the protection of human health. The third step compared chemical concentrations in downgradient wells to concentrations in the upgradient wells. EPA has identified aluminum, barium, iron, lead, manganese, ammonia nitrogen, and nitrate-nitrite nitrogen as COPCs for this site.

Concentrations of COPCs in ground water downgradient of the disposal area of Sparta Landfill exceed federal and/or state drinking water standards in the upper and lower aquifers. However, neither of these aquifers are used for drinking water. EPA uses health-based standards to determine risk while MDEQ uses both health and aesthetic (taste, color, odor, etc.) standards to determine risk. Since the above COPCs all occur naturally and a majority were detected in both the upgradient and downgradient monitoring wells at similar concentrations, these chemicals are not believed to be site related. EPA believes that the COPCs present little or no risk to humans for the following reasons:

- Residents living downgradient from the landfill do not use the upper or lower aquifers for their water supply.
- Local restrictions prohibit unpermitted well installation.
- COPC concentrations were similar to each other in upgradient and downgradient wells.

Ecological Risk

A 1997 Screening Level Ecological Risk Assessment (SLERA) was conducted to evaluate the potential for adverse impact to environmental receptors in the Rogue River. The SLERA concluded that the site does not pose unacceptable ecological risks.

Cleanup Objectives

The Cleanup Objectives for the site are to:

- Prevent exposure to contaminants in ground water at levels that would pose an unacceptable human health risk via ingestion, skin contact, and inhalation.
- Prevent the movement of contaminants from ground water to surface water above levels that pose a risk to human health and the environment.
- Prevent exposure via ingestion, skin contact, and **bioconcentration** of contaminants that may potentially move to the Rogue River.

Summary of Alternatives

The following alternatives have been considered to address ground water near the Sparta Landfill site. The alternatives are described in greater detail in a document called the **Feasibility Study (FS)** for the site. A copy of the FS can be found in the Information Repository. (See page 6 for the location of the Information Repository.)

Alternative 1 : No Further Action

Estimated Total: \$0
Capital Cost: \$0
Estimated Time Frame: N/A

Under this alternative, no active cleanup action, institutional controls (land-use restrictions etc.), or long-term monitoring would be implemented. However, a ground-water use restriction already exists and will remain in place even under the No Further Action alternative. According to the Superfund law, the No Further Action alternative must be evaluated to establish a baseline for comparison. Under this alternative, EPA would take no further action at the site to prevent exposure to the ground-water contamination. However, long-term care (e.g., cap maintenance) currently being performed for the landfill would continue.

Alternative 2: Ground-Water Monitoring

Estimated Total: \$300,000
Capital Cost: \$50,000
Estimated Time Frame: 4 weeks

This alternative involves the development and implementation of a ground-water monitoring program, and routine evaluation of data trends. The data obtained from the ground-water monitoring program must demonstrate that concentrations of COPCs are stable or decreasing based on observable trends in ground-water monitoring data. The difference between this alternative and the No Further Action alternative is that under this alternative, ground-water monitoring will continue.

In addition, the Kent County Department of Public Works has submitted a mixing zone determination for review by the MDEQ. Ground-water use is currently restricted by the Kent County Health Department’s *Water Supply Regulations for Kent County*. The mixing zone determination is a calculation used to determine whether, when both the concentration of a chemical and other environmental factors are taken into account, a chemical is above or below the GSI.

Alternative 3: Ground-Water Extraction and Treatment

Estimated Total: \$6.8 million
Capital Cost: \$1.5 million
Estimated Time Frame: 6 months

This alternative involves ground-water extraction and treatment. Ground water would be extracted from the aquifer, treated to remove contaminants, and discharged into the Rogue River under a federal surface water discharge permit.

Note: The estimated total cost refers to the operation and maintenance costs expected over the next 30 years. The capital cost refers to the initial startup cost for an alternative.

EPA's Recommended Cleanup Plan

Based on the information collected to date on the site contamination and associated risks to human health and the environment, EPA believes that a combination of Alternative 1 (No Further Action) and Alternative 2 (Ground-Water Monitoring) represents the best balance of the nine criteria. As a result, EPA is recommending no further action with ground-water monitoring. Alternative 2 will include monitoring of water wells near the site to ensure that the remedy is protective. Since waste will be left in place, ground-water monitoring and five-year reviews will be conducted for the next 30 years.

The Kent County Health Department has a regulation that allows the County to deny the installation of water supply wells in this area. This regulation requires a permit to install a new water supply or modify an existing one. The permit is subject to approval by the Kent County Health Department, which may impose limitations or conditions deemed necessary to protect the public health or ground-water quality. Additionally, the upper and lower aquifer does not present an unacceptable health risk to humans because there are no private drinking water wells in the upper or lower aquifer downgradient of the site. The only drinking water wells that are present are in the bedrock beneath the lower aquifer and are confined within the bedrock. Also, a draft Sparta Township ground-water use ordinance which prohibits the use of ground water in the

vicinity of the Sparta Landfill site may potentially be in effect, if approved by MDEQ.

Estimated Total:	\$300,000
Capital Cost:	\$50,000
Estimated Time Frame:	4 weeks

The public is encouraged to review and comment on all of the alternatives identified in this Proposed Plan.

Evaluating the Recommended Alternative

EPA evaluated the recommended alternative against seven of the nine evaluation criteria. (See page 6 for a description of the evaluation criteria.) The community acceptance criterion will be evaluated after public comments are received by EPA. MDEQ is currently evaluating the recommended alternative. EPA believes that the recommended alternative meets the criteria and provides the best balance of trade-offs among alternatives with respect to the evaluation criteria. Based on available information, EPA believes that the recommended alternative would be protective of human health and the environment, would comply with applicable or relevant and appropriate requirements (ARARs), and would be the most cost effective.

Public Comment Period

EPA has established a public comment period to give the community an opportunity to comment on the RI/FS and Proposed Plan. The comment period begins on August 1, 2000, and ends on August 30, 2000. Written comments must be postmarked no later than August 30, 2000, and should be sent to Janet Pope, EPA Community Involvement Coordinator (see section entitled "For More Information" on the back page).

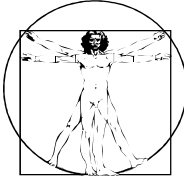
EPA may modify the Proposed Plan or select another cleanup alternative from the RI/FS based on new information provided by the public. Therefore, the public is encouraged to review and comment on all of the cleanup alternatives in the RI/FS.

At the conclusion of the comment period, EPA will review all of the comments it receives before making a final decision. EPA will respond to the comments in a document called a Responsiveness Summary. The Responsiveness Summary will be placed in the Information Repository.



Explanation of the Nine Criteria

1. Overall Protection of Human Health and the Environment. Assessment of the degree to which the cleanup alternative eliminates, reduces, or controls threats to public health and the environment.



2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs). An evaluation of whether or not the alternative complies with all other state and federal regulations - environmental or otherwise.

3. Long-Term Effectiveness and Permanence. The cleanup alternative is evaluated in terms of its ability to maintain reliable protection of human health and the environment over time once the cleanup goals have been met.



4. Reduction of Toxicity, Mobility, or Volume Through Treatment. An evaluation of how well a cleanup alternative reduces the harmful nature of the chemicals; the ability of the chemicals to move from the site into the surrounding area; and the amount of contaminated material.

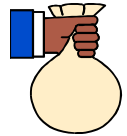


5. Short-Term Effectiveness. The length of time needed to implement a cleanup alternative is considered. EPA also assesses the risks that carrying out the cleanup alternative may pose to workers and nearby residents.



6. Implementability. An assessment of how difficult the cleanup alternative will be to construct and operate, and whether the technology is readily available.

7. Cost. A comparison of the costs of each alternative. Includes capital, operation, and maintenance costs.



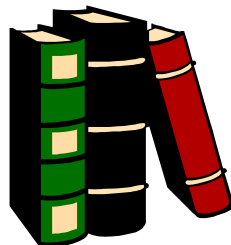
8. State Acceptance. EPA takes into account whether or not the state agrees with the recommended alternative, and considers comments from the state on the RI/FS Reports and Proposed Plan.

9. Community Acceptance. EPA considers the comments of local residents on the recommended alternative presented in this fact sheet and on the information in the Proposed Plan and RI/FS Reports.



Information Repository

EPA has established a file for public review called an information repository. The Information Repository contains documents related to the project and the Superfund Program. The repository is located at:



Sparta Township Public Library
80 North Union
Sparta, Michigan

Phone: (616) 887-9937

An Administrative Record, which contains all of the information upon which the selection of a cleanup plan is based, will also be available at the Sparta Township Library.

The Next Step

EPA will evaluate public comments received during the public comment period before EPA selects a final cleanup plan. The final cleanup plan will be described in a final decision document that will be available to the public. After a final plan is chosen, the plan will be designed and implemented.

Glossary

Ammonia Nitrogen - A colorless gas used in the manufacture of fertilizers and a variety of nitrogen-containing organic and inorganic chemicals. It can be toxic by inhalation, ingestion, or by direct skin contact.

Aquifer - A layer of rock, sand, or gravel below the ground surface where all open spaces between rock or soil grains are filled with water. Aquifers can supply usable quantities of ground water through wells and springs.

Barium - A soft, silvery-white metal, naturally found in the earth, that is used in various metal alloys and in rat poison. It can be toxic by inhalation, ingestion, or by direct skin contact.

Bioconcentration - The process by which organic chemicals and certain metals accumulate in tissues of exposed organisms. When the organisms are consumed by predators, some of these contaminants can increase in concentration in the predator.

Cadmium - Used in electroplating, in the manufacture of batteries, and as a pigment. Inhalation of cadmium fumes or dust may cause respiratory problems and chronic exposure damages the liver and kidneys and may cause emphysema.

Cap - A layer of material such as clay or synthetic material, used to prevent rainwater from penetrating and spreading contaminated materials beneath it. The surface of the cap is mounded or sloped so that water will drain off.

Comprehensive Environmental Response and Liability Act (CERCLA) - A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The Act created a special tax that goes into a trust fund, commonly known as Superfund, to investigate and clean up hazardous waste sites. Under the program, EPA can:

- pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work.

- take legal action to force parties responsible for site contamination to clean up the site or pay back the federal government for the cost of the cleanup.

Feasibility Study (FS) - A study which evaluates different methods to clean up contamination problems found during the Remedial Investigation (RI).

Manganese - Usually found in iron ore. Inhalation of dust or fumes over a period of time can cause damage to the central nervous system.

Nitrate-Nitrite-Nitrogen - A nutrient that is formed by the decay of naturally-occurring organic material in soil, manure, or human wastes. Nitrogen is also a common ingredient in fertilizers and nitrate and nitrite are forms of nitrogen broken down. Ingesting high levels of these nutrients over long periods of time can cause health impacts.

Remedial Investigation (RI) - An investigation which examines the nature and extent of contamination problems at a site.

Semi-Volatile Organic Compounds (SVOCs) - A group of chemicals which evaporate in air at a slower rate than VOCs. Many are suspected or known to cause cancer or other illness.

Volatile Organic Compounds (VOCs) - A group of organic compounds that have a tendency to evaporate when exposed to air. Due to this tendency, VOCs disappear more rapidly from surface water than ground water. Since ground water does not usually come in contact with air, VOCs are not easily released and can be present for many years in ground water used for drinking water. When present in drinking water, VOCs may pose a potential threat to human health.

Zinc - A bluish-white shiny metal and is commonly found in the air, soil, and water. It is used as a coating to prevent rust and is mixed with other metals to make alloys like brass and bronze. Eating large amounts of zinc over a long period of time can cause anemia or damage to the pancreas.

For More Information

For more information about the public comment period, public meeting, Proposed Plan, or any other aspects of the Sparta Landfill project, please contact:

Janet Pope

Community Involvement Coordinator
Office of Public Affairs (P-19J)
EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590
Phone: (312) 353-0628 or
(800) 621-8431 ext. 30628
Fax: (312) 353-1155
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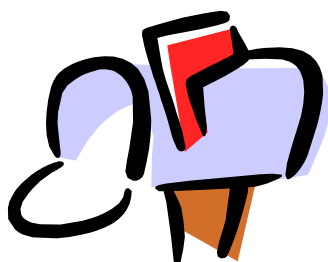
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77 West Jackson Boulevard
Chicago, IL 60604-3590



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You may use the space below to write your comments. You may hand this in at the August 15, 2000, public meeting or fold and mail it to Janet Pope. Comments must be postmarked no later than August 30, 2000. If you have any questions, please contact Janet Pope at (312) 353-0628, or toll-free at 1-800-621-8431 ext. 30628. Comments may also be faxed to Janet at (312) 353-1155 or sent via email to: pope.janet@epa.gov

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Name _____

Affiliation

Address

City _____ State _____

Zip _____

Sparta Landfill Site Comment Sheet

Fold, stamp, and mail

Name_____

Address_____

City_____ State_____

Zip_____

Place
Stamp
Here

Janet Pope
Community Involvement Coordinator
Office of Public Affairs (P-19J)
EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590